VENTURE CAPITAL IN CANADA

AN OVERVIEW

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The venture capital industry in Canada entered a new stage of growth and development in the 1980s. Prior to this decade, in contrast to the United States, the concepts of innovation and entrepreneurship were slow to take hold in this country. Throughout the 1960s and 1970s, significant differences in economic structure, markets, public policy, and prevailing attitudes resulted in an environment that was less conducive to the development of entrepreneurial opportunities and, hence, to venture investment activity, than was the case in the United States.

The environment and, consequently, investment activity have changed dramatically in Canada since the early 1980s, although many of the emerging trends still differ considerably from those in the U.S. The importance of innovative firms in achieving the necessary economic restructuring is now more widely accepted and the potential for superior returns from venture investments is increasingly recognized.

As a result, investment activity has increased substantially. Between 1975 and 1979, the Canadian venture capital industry made about 260 investments involving a total of about $100 million. Between 1980 and 1984, the industry invested almost $500 million in more than 600 firms in Canada and the U.S. In 1985 and 1986 alone, an additional $450 million was invested in 367 companies. Clearly, considerable momentum has started to build.

This report provides an overview of the venture capital industry in Canada. It examines the management structure of the capital available for venture investing, the sources of this capital, and the investment trends that have emerged as the level of investment activity has increased. An understanding of the dynamics of the venture investment process in Canada can help to shape future policy initiatives.

The report addresses five key areas:

- characteristics of venture capital and how it differs from other capital;

- growth of the base of capital under professional management;

- sources of capital for venture investment, and their effects on investment trends;

- trends in investment activity by Canadian venture investors; and

- availability of experienced, professional, venture capital managers and their expertise.

II. WHAT IS VENTURE CAPITAL?

Venture capital is often assumed to be speculative, high-risk capital invested in start-up companies with a technology orientation. In fact, venture capital is better defined as equity or quasi-equity capital invested in either new or established businesses that appear to have significant growth potential and that are unable to secure the financing they require from conventional sources on acceptable terms. It is the "potential" rather than the "proven" growth that increases not only the perceived rewards but also the risks, and moves an investment into the venture arena.

While the suppliers and the managers of the capital influence the nature of the investments (as discussed later in this report), venture capital investments are made throughout the full business development cycle. These investments can encompass emerging growth companies still in the seed or start-up stage (not yet in commercial production); established young companies needing capital for the first round of expansion; more mature companies needing expansion or "mezzanine" financing to achieve the next tier of growth before going public; and companies being acquired either by the existing management team or by an outside party.

Venture capital is also invested across the full range of industry sectors, including businesses in conventional sectors as well as leading-edge technology firms. The purpose of the venture capital itself, and the role that the venture investor plays with the investee or portfolio companies varies considerably, depending on the firm's stage of development and the reasons for which the capital is provided. A narrow definition of venture capital is therefore inappropriate and too limiting.

Given that the major orientation of venture capital is towards younger firms with high growth potential, three attributes differentiate venture capital from conventional investments. A venture investment typically

- involves an equity, or potential equity, participation by the venture capitalist, either through the direct purchase of stock, or through warrants, options, or convertible securities;

- is a long-term investment discipline that often requires five to ten years before investments provide any significant returns (which are expected to accrue through capital gains rather than income); and

- requires active involvement on the part of the venture investors in their portfolio companies, often through participation on the board of directors, allowing them to add value to their investments

Thus, the focus of venture investing is on business development for long-term capital appreciation. It spreads across the full range of small and medium-sized businesses at all stages of development, with the objective of financing those smaller firms that are most likely to be much larger firms in the future.

Venture capital investors usually seek investment opportunities in niches within potentially large markets which are either too small or too risky to attract the interest of larger corporations. Most venture capitalists invest in companies that are commercializing applications of existing technologies rather than developing new technologies.

Although venture capital plays an important role in the development of emerging growth companies, the driving force behind the venture investment process is the recognition by entrepreneurial young firms of market niches and new growth potential that can be effectively, and profitably, exploited. Venture capital supports, promotes, and enhances the growth potential of these enterprises, but it is on the base of entrepreneurial activity in all industries at all levels that the venture investment process is built.

Venture Capital and Conventional Financing

The relationship between venture capital and more conventional sources of financing is generally a function of

- external market conditions and the role being played by conventional financing sources;
- the preferences of entrepreneurs; and
- the degree of interaction between venture capitalists and the conventional financing sources.

External conditions can influence the venture capital markets on both the supply and demand sides. During periods of tight credit and high interest rates, venture investors are often presented with investment opportunities that, under other circumstances, would be financed by conventional sources. Similarly, during times when the public stock markets are unreceptive to new junior issues, companies that are otherwise ready to go public will often approach venture capitalists for "mezzanine" financing required to sustain growth until the public markets are more receptive. On the other hand, when public stock markets are active and receptive to smaller company issues (as has recently been the case with the Toronto Stock Exchange (TSE) and the Montreal Stock Exchange (MSE)), smaller firms, which might otherwise seek venture capital, go directly to the public markets to meet their financing requirements.

On the supply side, if conventional sources of outside capital are tight, venture capitalists often must attend first to the financing needs of those companies already in their portfolios, leaving less capital and time available to make new investments.

The relationship of venture capital to conventional financing sources is also influenced by the preferences of entrepreneurs. The preferred mix of debt and equity financing varies radically among smaller enterprises. In the past, venture capital has often been seen to be "vulture capital" by many Canadian entrepreneurs. As the venture capital industry itself has grown in both size and maturity, particularly over the past five years, this notion has been dispelled to some extent. More investors take minority (rather than majority) positions, and as the supply of capital grows, so too does the competition for good deals, with benefits for the entrepreneurs.

However, the Canadian entrepreneurial community is only now starting to recognize that equity investments can contribute to a level of growth that would otherwise be unattainable. Historically, a reluctance to "give up" any of the company has kept many entrepreneurs out of the venture arena altogether.

Finally, the relationship between venture capital and conventional financing sources is influenced by the degree of interaction between the two groups of players. Interaction is increasing through co-investment activity, which allows venture capitalists to access a larger base of capital to meet the future financing needs of their portfolio companies. For example, some of the larger pension funds and insurance companies are beginning to invest directly alongside venture capitalists in later-stage expansion financings and leveraged buy-outs. Similarly, the banks have become very active participants in venture-financed leveraged buy-outs.

Lending institutions are becoming more directly and actively involved in the venture capital market. Some Canadian banks and term-lending organizations are now structuring themselves to better provide "one-stop shopping" for smaller enterprises, by meeting their debt requirements through their conventional services and by providing equity capital through their venture operation.

In the past few years, the banks, investment firms, and stock exchanges are increasingly recognizing the business opportunities offered by the smaller business sector. As this recognition grows, the interaction between the venture community and conventional sources of financing will continue to strengthen.

III. HOW MUCH CAPITAL HAS BEEN COMMITTED FOR VENTURE INVESTING?

Although the nucleus of the Canadian venture capital industry formed in the mid-1950s, there were few participants during the industry's first 20 years. Several new firms were formed in the mid-1970s, but momentum did not really start to build until the beginning of this decade. The base of capital under professional management for venture investing stood at about $1.5 billion at the end of 1986 (more than a fourfold increase since 1981). By April 1987, an additional $200 million of new capital had already been committed, sustaining the strong growth rates of 1986.

Management Structure within the Industry: Changing Dynamics

The Canadian venture capital industry comprises three quite separate groups of players: private independent venture firms; venture capital subsidiaries (or divisions) of corporations (financial and non-financial); and Crown-related groups mandated to make direct venture investments. Whereas more than 75% of the industry's capital in the U.S. is managed by independent venture funds, the three types of investors each account for a significant share of the capital base in Canada.

By the end of 1980, the Canadian venture capital industry had an estimated $340 million of capital under management, which was divided almost evenly between corporate venture groups and private independent funds. Crown-related groups were not significant players at that time. The capital base increased by about $100 million in total in each of the following two years, before almost doubling from $540 million in 1982 to more than $1 billion in 1983 (Figure 1).

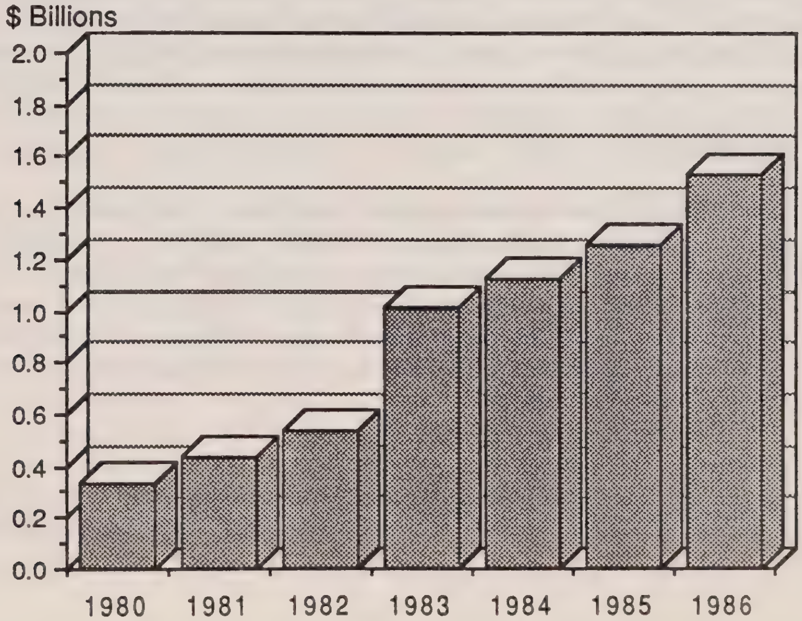

Figure 1. Canadian capital committed for venture investing, 1980-1986.
Source: Venture Economics Canada Limited.

This large increase was explained, in part, by the formation of Vencap Equities, an Alberta venture fund capitalized with $250 million, $50 million of which was raised through the public markets and $200 million of which came in the form of a loan from the Government of Alberta. Because Vencap is a Crown-related venture group, its establishment changed the management structure within the industry significantly in terms of the distribution of capital (Table 1).

TABLE 1

MANAGEMENT STRUCTURE OF VENTURE CAPITAL INDUSTRY

Type of investor	% of total capital under management					
	1981	1982	1983	1984	1985	1986
Independent venture funds	52	50	36	38	38	41
Corporate subs	41	40	30	31	32	36
Crown-related	7	9	33	31	30	23
TOTAL CAPITAL UNDER MANAGEMENT ($ millions)	$439	$543	$1013	$1124	$1257	$1531

The flow of new capital slowed during 1984 after the upsurge in the previous year, and remained slow during 1985. Legislation to encourage pension fund investing in venture capital situations was proposed in the federal budget in May 1985 but the regulations were not finalized until April 1986. As a result, pension funds were inactive during this period and little new capital flowed into the industry.

However, a new upsurge occurred in 1986 and has continued into 1987. New commitments in 1986 reached almost $275 million, of which more than half went to independent venture funds. During the first four months of 1987, these independent venture groups alone have secured new capital commitments in excess of $200 million. As the data indicate, the independent venture capital funds in Canada are managing a growing share of the industry's capital base.

This trend reflects an increasing maturity within the industry as investors become more confident about placing capital in the hands of professional managers for venture investing. In the late 1970s in the

U.S., only about 40% of the venture capital was managed by private independent venture groups. More than 75% of the industry's capital in that country is now managed by these groups. The Canadian industry appears to be moving in a similar direction.

The changing management structure of the venture capital base influences the types of investments made by the industry because the different types of investors build their own objectives into their investment strategies. Thus, the venture capital divisions of non-financial corporations often include some of the corporation's strategic objectives in their investment strategy. Northern Telecom's venture group, for example, has a strong orientation towards telecommunications companies and invests heavily in the U.S. to achieve its strategic objectives. Bank affiliates, on the other hand, often attempt to extend their banking expertise into their venture capital operations by investing in more mature companies in conventional industries.

The investment policies of the Crown-related venture groups are quite diverse. Ontario's Resource Machinery and Equipment Centre is sector-specific, and Innovation Ontario concentrates on early-stage investments. The two large investors in this group (the Federal Business Development Bank Venture Capital Division and Vencap) do not focus on a particular stage or industry. However, by virtue of its size, Vencap participates in larger financings than most venture investors, thereby influencing the aggregate investment trends for this group.

The private independent venture groups are increasingly attempting to differentiate themselves from other investors by positioning themselves in particular segments of the market. Previously, most of these groups were established as balanced funds, investing across a broad range of industries at all stages of the business development cycle. More recently, however, investment has been focussed at the more mature end of the cycle, primarily in response to increased pension fund investing (which is discussed later in more detail).

Growth of Average Fund Size

Accompanying the shift within the venture industry towards independent venture groups is a trend towards larger venture capital funds. At the end of 1986, about 60 active venture investors were managing the \$1.5 billion of committed capital, with an average of \$25 million per venture fund. Although 67% of these venture funds are managing less than \$25 million, collectively they account for only 28% of the industry's capital. In contrast, only 8% of the venture funds are managing more than \$50 million, but together they account for 37% of the industry's capital.

Venture funds, particularly the new funds being raised by independent venture groups, are becoming larger. In 1986, Canadian Pension Equities

Limited raised a $60 million fund, the largest ever raised by a Canadian venture group. Since the beginning of 1987, a new buy-out fund has been raised by the Schroder group, with a capital base of $82 million, which surpasses this record. A $50 million "mezzanine" fund has also been raised by Helix Investments and Gordon Capital. Ventures West III, a follow-on fund raised by the Ventures West Group based in Vancouver, closed on $43 million, compared to the $28 million fund raised by Ventures West in 1983.

The growth of larger funds has obvious implications for investment trends. Investors will increasingly look towards larger deals to accommodate their larger capital base, and the minimum size of investment will increase as a result. The effect of such deals is discussed later.

Regional Allocation of Capital

The base of capital available for venture investing has been, and continues to be, concentrated in central Canada. The establishment of Vencap Equities, which invests almost exclusively in Alberta, dramatically increased the share of the industry's capital being managed from that province. However, the majority of independent and corporate funds are managed from Ontario and Quebec.

At the end of 1986, 50% of the $1.5 billion under management was based in Ontario, 24% in Alberta, and 23% in Quebec (Figure 2). Only one major venture group is based in British Columbia at present (Ventures West), one small formal fund in the Prairie provinces (First Merchant Equities), and one small formal fund in the Atlantic region (Atlantic Ventures Trust).

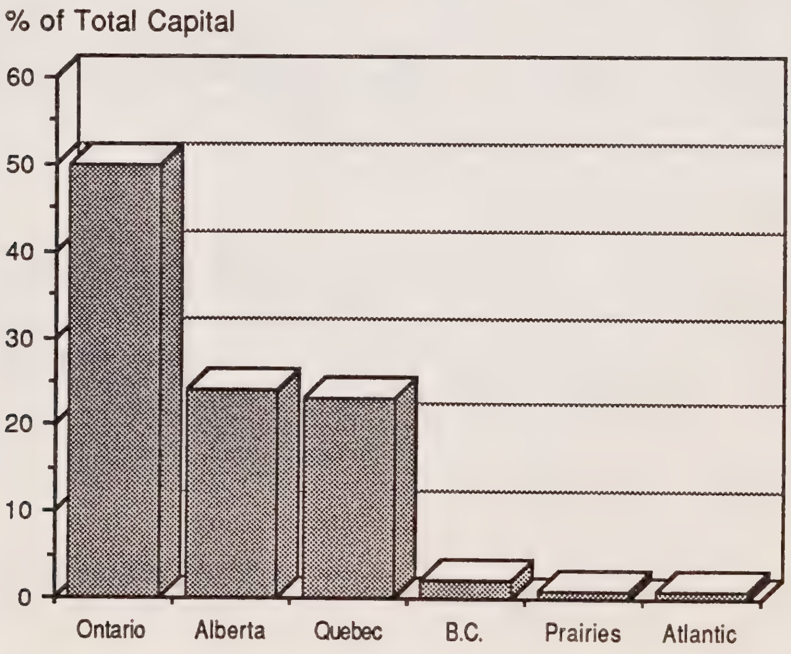

Figure 2. Regional distribution of capital under management as of December 1986.

Source: Venture Economics Canada Limited.

There is a strong correlation between the regional distribution of capital under management and that of capital disbursements, which is driven primarily by practical considerations. By definition, venture capitalists are actively involved with their investments, at least to the extent of taking a seat on the board of directors. Although most investors express a theoretical willingness to invest in good opportunities wherever they may be, in practice they make many, if not most, of their investments within a two-hour journey of their offices.

The geographic distribution of the capital under management also influences access to that capital by entrepreneurs. It is more difficult and costly for an entrepreneur based in Winnipeg, for example, to secure capital from a Toronto venture capital firm than for a young growth firm located in Toronto. Although interprovincial flows of capital occur, the fact remains that venture capital is somewhat regional in its orientation. The regional distribution of capital therefore indicates the likely geographic distribution of investment activity.

This distribution demonstrates that an increase in the availability of local capital in regions outside central Canada is one of the prerequisites to increasing the level of investment activity in these regions.

IV. WHERE IS THE CAPITAL COMING FROM?

As independent venture funds have increased in Canada, the sources of capital for venture investing have diversified. In the case of corporate venture groups, the corporation itself provides the capital for investing, usually making allocations on an annual basis. Similarly, Crown-related groups obtain their capital either directly from the Crown sponsor, or through the borrowing powers of the Crown agency. Although these groups are important within the Canadian venture industry, their supply of capital is vulnerable to changing corporate and political agendas. Independent venture groups, on the other hand, are usually established with an explicit life span of at least ten years. Investors in these funds are therefore committing their capital for the long term and have no option, except under very unusual circumstances, to withdraw that capital. As a result, the more dominant these independent venture groups are within the industry, the more secure is the supply of venture capital for emerging Canadian growth companies.

The independent venture funds are typically capitalized with investments from a number of investors external to the fund's management group. Venture fund managers are most likely to turn to pension funds, insurance companies, wealthy individuals, and corporations (and, to a lesser extent, to foreign investors and trusts or endowments) in their efforts to raise a venture fund. In each case, the investor must be convinced of the potential to achieve a superior rate of return to compensate for the higher risk associated with long-term investments in young private companies.

Pension funds are candidates for venture investments, given the long-term nature of their benefit liabilities. The rapid growth in trusteed pension assets, which has outstripped the rate of growth in the capital markets, has also forced more and more pension fund managers to look for alternate investment opportunities outside of traditional areas to maintain strong returns on these assets.

Nevertheless, the long-term nature of venture investments, coupled with the perceived risks and the general lack of understanding of the venture investment process, mitigated against significant pension fund investing in the venture arena until recently. Many pension funds and their professional investment managers still consider venture investing to be synonymous with a quick trip to Las Vegas and, consequently, explicitly exclude venture investments from their investment strategies. These fund managers generally still perceive venture capital to be exclusively the realm of high-risk, early-stage, technology investing, rather than the more diversified investment activity that it is in both Canada and the U.S.

However, many managers of the larger pension funds have become active venture investors over the past five years. In the course of developing

the necessary understanding and expertise, most of these funds have been invested indirectly through professionally managed venture funds, rather than directly in entrepreneurial young companies. As a result, pension funds have become the single, most important source of capital for Canadian venture capital funds (Table 2).

TABLE 2

SOURCES OF NEW CAPITAL COMMITTED TO INDEPENDENT VENTURE GROUPS

Sources	% of new capital committed			
	Canada		United States	
	1985	1986	1985	1986
Pension funds	37	67	33	49
Corporations	20	21	12	12
Insurance companies	11	9	11	10
Individuals	13	3	13	12
Foreign	-	-	23	11
Other	19	-	8	6
TOTAL NEW CAPITAL COMMITTED	$54MM	$168MM	$2.3B	$3.4B

The increase in venture investment levels by Canadian pension funds is a function of several factors. First, the venture industry itself has matured in response to the growth of the past five years, and now presents itself as a more credible and legitimate investment option for institutional investors. Second, the federal government regulations introduced in 1986, which allow pension funds to increase their allowable foreign investments by $3 for every $1 invested in qualifying venture capital situations, significantly increased the profile of venture investments with these investors. Although the response to this initiative has been mixed, the discussion about the regulations between May 1985 and April 1986 unquestionably brought venture capital to the attention of many pension fund managers for the first time.

Third, and perhaps most important, many venture investors have recognized an increased willingness on the part of pension fund managers to participate in non-traditional investments and have packaged their product primarily for the pension fund market. Because many pension fund managers consider venture investments in established companies in need of expansion capital to involve less risk than investments in earlier-stage companies, several new venture funds have been established with an explicit later-stage focus. The investment strategies of these

funds is to invest in established small and medium-sized companies with the potential to achieve significant growth. In many cases, the objective is to finance companies with the potential to go public within two to three years of the investment. In other cases, it is to concentrate the funds on financing leveraged buy-outs of existing companies by the existing management group or by an outside third party. In either case, the holding periods for the investments would be less than that which would typically be expected for earlier-stage investments (with a commensurate reduction in the anticipated rate of return).

For many pension funds, these types of investments are favoured because the exiting options are more obvious and the shorter time horizon is considered attractive. As a result, more venture funds are being structured to appeal to these perceptions and to attract more pension fund capital. However, this emphasis is skewing the supply of venture capital more heavily towards later-stage investments. Thus, in the short term at least, more venture funds are likely to be invested in mature companies, which will limit the growth in the capital available for younger Canadian companies with growth potential.

However, market forces are bound to come into play. As more capital concentrates at the upper end of the market, the competition for investment opportunities will increase, which will create an upward pressure on the price of investments in later-stage companies. Over time, investors are likely to respond to this pressure by moving to less competitive segments of the market, i.e., to earlier-stage companies. The supply of capital is therefore likely to be dispersed across a broader range of companies as the industry matures.

Thus, the supply of capital available to earlier-stage companies will likely continue to be constrained in the short term. There is also some risk that the expectations of pension funds in investing only in later-stage funds will not be met. The ability to exit from venture investments in more mature companies will be influenced to some extent by the receptiveness of the public equity markets to new issues by smaller companies. A sluggish public market could result in investors having to hold their positions for longer than expected, with negative implications for the rate of return ultimately achieved. Disappointing returns could lead new pension fund investors to withdraw from venture investing.

Although the principles of diversification are well understood in the context of traditional investments, they are still often not recognized by pension fund managers when it comes to venture investing. A sustained investment policy across a broad range of industries and development stages is fundamental to long-term performance. It is reasonable to expect that, given this recent concentration on the more mature segment of the market, managers will differentiate their new venture funds by moving into less crowded segments, which will diversify pension funds in the process.

V. WHERE IS THE CAPITAL BEING INVESTED?

The amount of capital invested by the Canadian venture capital industry has been increasing along with the growth in the supply over the past several years (see Table 2). Industry disbursements rose from $79 million in 1982 to almost $250 million in 1985. Aggregate investment activity fell off to $206 million in 1986, although virtually all of the decline was explained by a reduction in the amount of capital being invested in companies outside Canada.

Less than 14% of the $206 million invested in 1986 went to non-Canadian companies, compared with 31% in 1985 and 40% in 1984 (Figure 3). About $180 million has been invested in Canadian companies in each of the last two years, compared with the previous peak of $75 million. This level of activity provides evidence that the demand for venture capital in Canada (as reflected in the availability of good investment opportunities) is responding to the growth in the supply of capital.

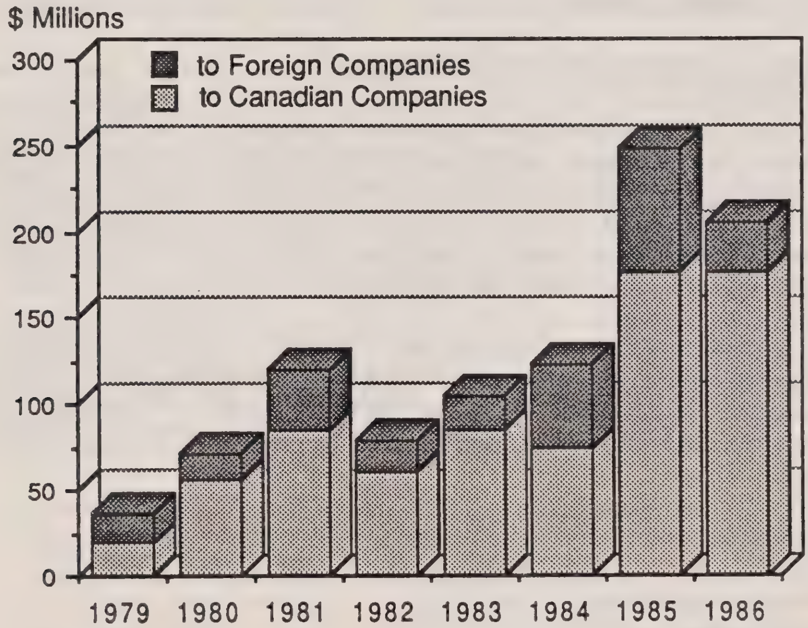

Figure 3. Growth of venture capital disbursements, 1979-1986.
Source: Venture Economics Canada Limited.

Before examining the technology content of this investment activity, some interesting trends in the aggregate investment data warrant attention. Independent venture capital groups accounted for almost 50% of capital invested in 1986, compared with 30% in 1985, which provides

further evidence of the growing prominence of these funds within the industry. The investment strategies of independent venture capital funds can therefore be expected to increasingly determine the flows of capital. These funds invest more actively in technology companies than do either corporate or Crown investors.

Corporate venture groups reduced the amount invested in 1986 by 32% from the previous year. This decline was explained primarily by a sharp reduction in the average size of investment, which fell from $1.8 million to $965,000. The number of companies financed by corporate venture groups in 1986 actually increased marginally from 53 to 56. The amount of capital invested by Crown-related venture groups fell from $60 million in 1985 to $41 million in 1986, primarily in response to the winding up of the IDEA Corporation.

Almost 75% of the capital invested in 1986 went to companies based in Ontario (31%), Alberta (25%), and Quebec (17%). Firms in British Columbia, Saskatchewan, Manitoba, Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland accounted collectively for only 10% of total capital invested, and most of this went to firms in British Columbia and Saskatchewan.

Venture Capital and Technology Companies

In the U.S., a fairly clear relationship has developed over the past 10 years between the venture capital community and the young and innovative technology sector. Venture capital has played a critical role in financing the growth of young firms developing new, commercial applications of existing technologies. This relationship has been less clear in Canada for a number of reasons.

To determine the extent to which the venture capital community in Canada is financing growth-oriented technology companies, and to examine the flows of venture capital to these companies, all investment activity, for the period 1984 to 1986 inclusive, is presented by technology sector, as follows:

- communications
- computer-related
  - software
  - hardware
- electronics
- genetic engineering
- industrial automation
- medical-related.

Each sector was analysed to determine the number of financings provided by Canadian venture capitalists to Canadian companies and to foreign companies, and the amount invested during each of the past three years. The data resulting from the analysis of 1986 investment activity (presented in Table 3) illustrate several points of note.

1. Of the 196 financing rounds provided by the Canadian venture industry in 1986, 105 (54%) involved technology companies (Canadian and foreign), representing a decline of 23% from the 136 technology company financings undertaken in 1985 (Table 4). The amount invested in these technology companies declined by 20% from $137 million in 1985 to $110 million in 1986.

2. Technology-based investing declined as a share of total financing activity in 1986, although the share of total capital invested going to technology companies remained stable. Technology-based investments accounted for 54% of all financings in 1986, compared with 65% in 1985, and about 55% of total capital disbursed in both years. The average size of financing increased in 1986, explaining the stability in the share of capital going to technology companies.

3. Canadian companies continued to capture a growing share of all technology investments made by the Canadian venture community in 1986. Of the 105 technology financings in that year, 85 (80%) involved Canadian technology companies. A total of $99 million of the $110 million disbursed to technology companies (90%) went to these Canadian firms. In 1985, 65% of the technology financings and 78% of the capital disbursed through them involved Canadian companies. In 1984, only 50% of the technology financings and 70% of the capital invested through these financings went to Canadian companies (Table 5). Clearly, Canadian technology companies are becoming more attractive to the venture capital community and are capturing an increasing share of total technology investment activity.

4. The number of financings provided to Canadian technology companies in 1986 and the amount of capital invested declined in absolute terms from the previous year. A total of 85 financings were done with Canadian technology companies, involving $99 million, down from 89 financings and $107 million in 1985.

5. Historically, the U.S. venture capital industry has had a significantly higher exposure to the technology sector than its Canadian counterparts. In 1985 (1986 data is not yet available) 79% of all financings and 83% of all capital invested went to technology companies. There are signs, however, that the U.S. industry is moving to reduce its technology exposure somewhat as a result of over-financing in particular technology sectors, which negatively affected performance. However, even with these reductions, the venture

capitalists in the U.S. are still likely to have invested a significantly higher share of their capital in technology-based companies.

6. Data available for 1984 and 1985 show that the gap in technology investing between the Canadian and U.S. venture industries is narrowing. In 1984, the U.S. industry financed 20 technology companies for every Canadian technology company financed by the Canadian industry, and invested $64 (US) for every $1 invested by Canadian venture capitalists. In 1985, the U.S. industry invested $20 (US) for every $1 invested by Canadian venture investors in technology companies, financing eight firms for every Canadian firm financed.

7. Although computer-related companies continued to be the largest recipient of venture capital in 1986, total disbursements to this sector were down significantly from 1985. The number of financings to computer-related firms actually rose from 26 to 30, but total disbursements declined by 30% from $28.5 million to $19.8 million. The average financing in computer-related companies decline from $1.1 million in 1985 to $660,000 in 1986.

8. The changes between 1985 and 1986 in the computer sector were most notable in hardware, in which the average financing declined from $1.4 million to only $400,000.

9. Investment activity declined significantly in industrial automation as well, with total financings falling from 29 ($21.3 million) in 1985 to 17 ($15 million) in 1986.

10. The medical-related sector showed a notable improvement in 1986, with nine firms attracting $15 million in 1986, compared with financings of $3.7 million in four firms in 1985.

The Canadian venture capital industry has provided about $250 million in financing to small and medium-sized Canadian technology companies over the past three years. This represents a significant amount of capital and it has unquestionably played a crucial role in the growth and development of many of these technology companies. However, technology-based investments have accounted for a lower share of total investment activity than might be expected, particularly given the relationship between venture capital and innovative technology firms in the U.S. Many Canadian venture investors seem less comfortable in assessing technology opportunities than their U.S. counterparts, and, as a result, hold a more diversified portfolio. The general discomfort with technology investments among pension funds (key investors in many venture funds) has also contributed to a more diversified investment

approach. Finally, but equally important, many Canadian investors perceive a management weakness in many technology companies. Together these factors have led to a significantly lower technology orientation within the Canadian venture capital community than has been the case in the U.S.

TABLE 3

1986 FINANCINGS OF TECHNOLOGY COMPANIES

Industry sector	Canadian investors ($MM CDN)					
	IN CANADA		FOREIGN		TOTAL	
	#	$	#	$	#	$
Communications	13	14.6	4	2.4	17	17.0
Software	20	14.9	6	3.4	26	18.3
Hardware	10	4.9	3	1.2	13	6.1
All computer-related	30	19.8	9	4.6	39	24.4
Electronics	9	16.6	2	2.1	11	18.7
Genetic engineering	7	17.6	1	0.5	8	18.1
Industrial automation	17	15.0	1	0.9	18	15.9
Medical-related	9	15.0	3	1.2	12	16.2
TOTAL TECHNOLOGY FINANCINGS	85	98.6	20	11.7	105	110.3
% OF TOTAL VENTURE FINANCINGS	52%	56%	61%	39%	54%	54%

Note: U.S. data unavailable at time of writing.

TABLE 4

1985 FINANCINGS OF TECHNOLOGY COMPANIES

Industry sector	Canadian investors ($MM CDN)						US investors ($MM US)	
	In Canada		Foreign		Total			
	#	$	#	$	#	$	#	$
Communications	11	14.8	7	4.1	18	18.9	189	520
Software	16	14.2	9	4.7	25	18.9	184	306
Hardware	10	14.3	16	9.9	26	24.2	310	876
All computer-related	26	28.5	25	14.6	51	43.1	494	1182
Electronics	12	19.3	7	4.3	19	23.6	131	449
Genetic engineering	7	19.3	2	5.1	9	24.4	40	160
Industrial automation	29	21.3	2	0.6	31	21.9	79	166
Medical-related	4	3.7	4	1.3	8	5.0	144	315
TOTAL TECHNOLOGY FINANCINGS	89	106.9	47	30.0	136	136.9	1077	2792
% OF TOTAL VENTURE FINANCINGS	63%	60%	70%	42%	65%	55%	79%	83%

TABLE 5

1984 FINANCINGS OF TECHNOLOGY COMPANIES

Industry sector	Canadian investors ($MM CDN)						US investors ($MM US)	
	In Canada		Foreign		Total			
	#	$	#	$	#	$	#	$
Communications	7	8.3	6	4.9	13	13.2	218	705
Software	3	3.4	6	3.9	9	7.3	217	398
Hardware	9	6.8	15	6.7	24	13.5	451	1427
All computer-related	12	10.2	21	10.6	33	20.8	668	1825
Electronics	4	4.3	2	0.8	6	5.1	159	463
Genetic engineering	3	4.1	--	--	3	4.1	38	94
Industrial automation	6	12.1	--	--	6	12.1	95	210
Medical-related	1	0.5	4	1.3	5	1.8	171	353
TOTAL TECHNOLOGY FINANCINGS	33	39.5	33	17.6	66	57.1	1349	3650
% OF TOTAL VENTURE FINANCINGS	49%	55%	62%	34%	55%	46%	80%	86%

Technology Investment Shifted Away from Early Stage in 1986

In 1986, some shift occurred away from early-stage technology investments in 1986 towards more mature companies. Of the 89 financings to Canadian technology companies last year, 34 or 40% went to companies not yet in full commercial production. Thirty financings (35%) involved companies at the expansion stage, and the remaining 22 financings went to technology companies for leveraged buy-outs, turnarounds, or expansion-oriented acquisitions. In 1985, half of the 45 venture financings of Canadian technology companies were made in firms still in the early stage of the development cycle (Tables 6, 7 and 8). Although this shift away from earlier-stage technology companies partially reflects a growing preference for investments in more mature situations by many new funds, it is also a function of natural cyclical factors. A concentration of investment activity in earlier-stage companies in one year will often lead to more expansion financings the next as the successful early-stage investments grow and require new expansion capital from their venture investors. Increased expansion financings can, therefore, be as much a reflection of successful investing in young technology companies as a deliberate move away from such companies.

The reduced early-stage financing activity in 1986 is also reflected in the disbursements data (Tables 9, 10 and 11). About 30% ($29 million) of the capital invested in Canadian technology companies last year went to early-stage companies, compared with 35% in 1985. The average size of early-stage financing across all technology companies remained relatively constant at about $840,000.

Investment activity varied considerably across individual technology sectors by stage of development. All but one of the seven genetic engineering financings were in companies still in the start-up stage. These financings accounted for almost 60% of the total capital disbursed to early-stage technology companies, although they represented only 18% of the financings. The average investment in these early-stage genetic engineering firms was almost $3 million.

Half of the software companies financed were early-stage companies, but these companies accounted for only 25% of the capital invested in all Canadian software firms. The average early-stage software financing was $380,000. Financings in more mature Canadian software companies averaged $1.1 million.

The majority of investments in medical-related firms were also in early-stage companies. The average financing for these firms was $700,000 compared with an average of more than $4 million for the two financings in medical-related companies already at the expansion stage.

TABLE 6

1986 FINANCINGS OF TECHNOLOGY COMPANIES BY STAGE OF DEVELOPMENT
(Number of financings by Canadian venture investors)

Industry sector	Early-stage		Expansion		Other		Total	
	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign
Communications	3	1	3	2	9	1	15	4
Software	10	4	8	1	2	1	20	6
Hardware	2	1	5	1	3	1	10	3
All computer-related	12	5	13	2	5	2	30	9
Electronics	--	2	5	--	4	--	9	2
Genetic engineering	6	1	--	--	1	--	7	--
Industrial automation	7	1	7	--	2	--	16	--
Medical-related	6	1	2	1	1	1	9	3
TOTAL FINANCINGS	34	11	30	5	22	4	86	18

TABLE 7

1985 FINANCINGS OF TECHNOLOGY COMPANIES BY STAGE OF DEVELOPMENT
(Number of financings by Canadian venture investors)

Industry sector	Early-stage		Expansion		Other		Total	
	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign
Communications	7	4	4	3	--	--	11	7
Software	8	2	8	7	--	--	16	9
Hardware	3	1	6	14	1	1	10	16
All computer-related	11	3	14	21	1	1	26	25
Electronics	2	3	6	4	4	--	12	7
Genetic engineering	7	--	--	1	--	1	7	2
Industrial automation	13	1	11	1	5	--	29	2
Medical-related	5	2	1	2	1	--	4	4
TOTAL FINANCINGS	45	13	36	32	11	2	89	47

TABLE 8

1984 FINANCINGS OF TECHNOLOGY COMPANIES BY STAGE OF DEVELOPMENT
(Number of financings by Canadian venture investors)

Industry Sector	Early-stage		Expansion		Other		Total	
	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign
Communications	4	3	2	1	1	2	7	6
Software	1	3	2	3	--	--	3	6
Hardware	5	5	3	10	1	--	9	15
All computer-related	6	8	5	13	1	0	12	21
Electronics	2	2	2	--	--	--	4	2
Genetic engineering	3	--	--	--	--	--	3	--
Industrial automation	--	--	6	--	--	--	6	--
Medical-related	--	2	1	2	--	--	1	4
TOTAL FINANCINGS	15	15	16	16	2	2	33	33

TABLE 9

1986 DISBURSEMENTS[a] TO TECHNOLOGY COMPANIES BY STAGE OF DEVELOPMENT
($ millions)

Industry sector	Early-stage		Expansion		Other		Total	
	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign
Communications	0.6	0.2	4.5	0.1	9.5	2.1	14.6	2.4
Software	3.8	2.9	7.7	0.1	3.3	--	14.8	3.0
Hardware	1.2	0.8	1.7	0.3	2.0	0.1	4.9	1.2
All computer-related	5.0	3.7	9.4	0.4	5.3	0.1	19.7	4.2
Electronics	--	2.1	5.9	--	10.7	--	16.6	2.1
Genetic engineering	17.3	0.5	--	--	0.2	--	17.5	--
Industrial automation	2.2	0.9	9.5	--	3.5	--	15.2	--
Medical-related	4.2	0.8	8.7	0.1	2.1	0.3	15.0	1.2
TOTAL DISBURSEMENTS	29.3	8.2	38.0	0.6	31.3	2.5	98.6	9.9

TABLE 10

1985 DISBURSEMENTS TO TECHNOLOGY COMPANIES BY STAGE OF DEVELOPMENT[a]
($ millions)

Industry sector	Early-stage		Expansion		Other		Total	
	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign
Communications	4.8	2.5	10.0	1.6	--	--	14.8	4.1
Software	5.7	0.2	8.6	4.5	--	--	14.3	4.7
Hardware	1.2	0.8	11.5	8.7	1.5	0.3	14.2	9.8
All computer-related	6.9	1.0	20.1	13.2	1.5	0.3	28.5	14.5
Electronics	1.7	0.9	2.3	3.4	15.4	--	19.4	4.3
Genetic engineering	19.3	--	--	0.2	--	5.0	19.3	5.2
Industrial automation	3.0	0.4	6.3	0.2	12.1	--	21.4	0.6
Medical-related	2.2	0.4	0.4	0.9	1.0	--	3.6	1.3
TOTAL DISBURSEMENTS	37.9	5.2	39.1	19.5	30.0	5.3	107.0	30.0

TABLE 11

1984 DISBURSEMENTS TO TECHNOLOGY COMPANIES BY STAGE OF DEVELOPMENT
($ millions)

Industry sector	Early-stage		Expansion		Other		Total	
	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign	Cdn	Foreign
Communications	0.7	1.7	1.2	1.3	6.4	1.9	8.3	4.9
Software	0.5	0.8	2.9	3.1	--	--	3.4	3.9
Hardware	3.4	1.3	3.2	4.8	0.2	--	6.8	6.1
All computer-related	3.9	3.1	6.1	7.9	0.2	--	10.2	10.0
Electronics	3.5	0.8	0.8	--	--	--	4.3	0.8
Genetic Engineering	4.1	--	--	--	--	--	4.1	--
Industrial Automation	--	--	12.1	--	--	--	12.1	--
Medical-related	--	0.6	0.5	0.7	--	--	0.5	1.3
TOTAL DISBURSEMENTS	12.2	5.2	20.7	9.9	6.6	1.9	39.5	17.0

In summary, although the Canadian venture capital community has become much more active in financing young Canadian technology companies in the past two years, the industry continues to maintain a lower technology exposure than is the case in the U.S. This situation is a function of both demand and supply considerations. On the demand side, even those investors who do actively finance early-stage Canadian technology companies maintain that many innovative technology companies still do not have the management capabilities to support the growth required to attract venture capital. On the supply side, much of the capital is coming from conventional institutional sources, which influence the investment strategy, and is being managed by investors with financial rather than technical expertise.

VI. HOW MANY PROFESSIONALS ARE INVOLVED?

As the venture capital industry in Canada has developed over the past five years, so, too, has the number of professionals operating within the industry (Table 12). By the end of 1983, 89 professionals were working in the industry; by the end of 1986, the number of professionals had risen to 160.

TABLE 12

PROFILE OF PROFESSIONALS IN CANADIAN VENTURE CAPITAL INDUSTRY: 1983-1986

Years of experience	Number of professionals			
	1983	1984	1985	1986
1 - 2	26	29	27	37
3 - 5	18	25	30	36
6 - 10	45*	24	27	43
11 - 15		14	15	18
Over 15		14	22	26
TOTAL	89	106	121	160

*Includes all professionals with more than 5 years experience.

The professional ranks of the industry have grown in experience as well as numbers. Whereas only 52 professionals had more than five years of experience in 1984, this had risen to 87 by the end of 1986. Venture capital is one of the last professional apprenticeship businesses. As professionals gain the experience of a full business cycle, they develop the skills required to manage a fund, and are therefore in a position to manage a new fund on their own. There are really no shortcuts to this process. However, the number of professionals entering the industry is growing quickly, and these new entrants will add to the base of experienced venture managers over the next five to seven years.

The industry is adding more operating and technical expertise to the traditional financial orientation of its managers. In 1986, 32% of the new entrants had a technical or operating background, (compared with 18% in 1985) and 45% of those with three to five years experience brought operating expertise to the industry.

The availability of experienced venture capital managers is critical to the future growth of the industry, and technical or operating expertise is equally important to developing strong links between venture capital and innovative technology companies.

VII. CONCLUSION

The Canadian venture capital industry has entered a new stage in its development and is likely to continue to attract and disburse increasing amounts of capital. More and more entrepreneurial Canadian companies will benefit from this development.

However, the markets are far from efficient, and limited understanding and information contribute to the inefficiencies. The information in this report should contribute to a better understanding of this important field.